The most interesting research-field possible: prof. Ohtsuki's research!

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I was always fascinated by prof. Ohtsuki work since I arrived here in YCU in 2008. Whereas many professors in the department of physics work in standard material physics and chemistry, I noticed that prof. Ohtsuki distinguished himself with completely different challenges.

"What was he studying?" I was wondering… "Econometrics" he told me one day. Well prof. Ohtsuki explained me that Economy, like cosmology and astrophysics and somehow even nuclear physics, is a research matter that can only be simulated and studied theoretically.

We cannot reproduce the "big-bang" in the laboratory, nor we can make a neutron star in a box, nor can we explode an atomic bomb in the basement to make a research test (!)

So Economist cannot create the big market crash of 1929 just to study the phenomena…. in this sense there is no reproducibility in Astrophysics or in Economy too.

The research of prof. Ohtsuki is more important for these reasons, it uses the observations of economical factors to make new and novel theories of the stock market, the economy in general and other related things, for example a quantitative model on how people take decisions.

As anybody can imagine, Ohtsuki research is much more complex and unpredictable than any other physical science. In physics, everything is defined by known laws. This doesn't happens in Economy, where the human factor is fundamental and where thousands of human-related other parameters are in play.

I discussed with him often about the difficulties of modeling human factors in econometric and economy. This challenging endeavor needs the use of things like "cellular automata", "adaptive systems" and open theories like "emerging phenomena" and "chaos". Everything prof. Ohtsuki is studying is non-linear and complex, so there are not definite theories and literature is controversial.

Everything he does is super-complex and uber-difficult!

For this reason I always admire him for the simplicity and the modesty he approached his research and how he kindly discussed his science with me and other colleagues.

I remember we collaborated in several cases: for important exams, for preparing students laboratories, and for making up original physics demonstration experiments for the general public. In this last case, I remember that his experiment was -of course- related to chaos, complexity and the entropy. Something very difficult to explain in simple terms to the general public. But he used a video: two students launching a ball back and forth to each other (catch-ball game). If the video is played backward, i. e. the time is inverted, we cannot understand any difference. However, prof. Ohtsuki prepared also another video: metal pinballs in a box, the box is shaken and the balls go out from a small hole. If you we play the video backward…. it looks very strange! In this case is possible to understand the time arrow! I understood prof. Ohtsuki is a genius: what a nice way to explain such abstract and theoretical concepts with a beautiful simple video. Great!

Time flies and now prof. Ohtsuki retires from our university, many of us will miss his research activities a lot. It was always so stimulating and mind blogging to follow his studies. I was the lucky one, because my room was adjacent his room, so I had the chance to often go and knock his door for some surprise!

Also, I am foreigner and, especially the first years, I could knock his door and ask questions about Japanese language, or how to do some paperwork here in YCU. He was always helping, with an energetic loud voice and a smile.

Now, because public universities limit our working years, I wish he can continue his research activity in some private institutions. I am looking forward to read about his new discoveries!